October 1969

Brief 69-10629

NASA TECH BRIEF

Glass Fabric Fire Barrier for Silicone Rubber Parts

The problem:

Silicone rubber materials have been found to be very useful as spacers, fillers, padding and wiring harness sheaths in many spacecraft/aircraft applications. They are preferred over other elastomers that exhibit objectionable odors and outgassing tendencies at low pressures. However, these silicone rubber materials present an appreciable fire hazzard due to their high flammability index, which becomes extreme in a high oxygen-content environment such as that found in a spacecraft cabin.

The solution:

Knitted glass-fabric covers that are preformed to completely surround the silicone rubber item.

How it's done:

The knitted glass-fabric covers are placed about the silicone rubber items in such a way as to completely isolate them from the effects of adjacent fire. These covers permit retention of the desirable resilient properties of the silicone rubber while forming a very effective fire barrier.

Notes:

1. Use of the knitted glass fabric permits employment of silicone rubber elastomers in a high oxygen atmosphere without adversely affecting the functional properties of the elastomers.
2. This technique would be useful in commercial aircraft and in military vehicles or weapon applications where such fire barriers are needed.
3. This Tech Brief is complete in itself. No additional information is available.

Patent status:

No patent action is contemplated by NASA.

Source: Kieth L. Blackmer of
North American Rockwell Corporation
under contract to
Manned Spacecraft Center
(MSC-15555)

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